

Notice No. 4 (Corrigenda)

Rules and Regulations for the Classification of Ships, July 2014

The status of this Rule set is amended as shown and is now to be read in conjunction with this and prior Notices. All corrigenda included in the Notice are effective immediately.

Issue date: September 2014

Amendments to	Effective date
Part 6, Chapter 1, Sections 2 & 3	Corrigenda
Part 6, Chapter 2, Sections 10, 14 & 17	Corrigenda
Part 6, Chapter 3, Sections 1, 4 & 7	Corrigenda

Part 6, Chapter 1

Control Engineering Systems

CORRIGENDA

■ Section 2

Essential features for control, alarm and safety systems

2.3 Alarm systems, general requirements

2.3.19 Where practicable, alarms displayed on monitors are to be displayed in the order in which they occur. Alarms requiring manual ~~shut-down~~ shutdown or slow-down action are to be given visual prominence.

2.6 Bridge control for main propulsion machinery

2.6.8 Automation systems are to be designed in a manner such that a threshold warning of impending or imminent slow-down or ~~shut-down~~ shutdown of the propulsion system is given to the officer in charge of the navigational watch in time to assess navigational circumstances in an emergency. In particular, the systems are to control, monitor, report, alert and take safety action to slow down or stop propulsion while providing the officer in charge of the navigational watch an opportunity to intervene manually, except for those cases where manual intervention will result in total failure of the engine and/or propulsion equipment within a short time, for example, in the case of overspeed.

2.13 Programmable electronic systems – Additional requirements for essential services and safety critical systems

2.13.1 The requirements of 2.13.2 to 2.13.10 are to be complied with where control, alarm or safety systems for essential services, as defined by Ch 2,1.6, or safety critical systems, incorporate programmable electronic equipment.

- (a) Safety critical systems are those which provide functions intended to protect persons from physical hazards (e.g., fire, explosion, etc.), or to prevent mechanical damage which may result in the loss of an essential service (e.g., main engine low lubricating oil pressure ~~shut-down~~ shutdown).
- (b) Applications that are not essential services may also be considered to be safety critical (e.g., domestic boiler low water level ~~shut-down~~ shutdown).

■ Section 3

Ergonomics of control stations

3.3 Physical environment

3.3.2 In general, noise levels are to comply with IMO Res. A.468(XII) ~~Code on Noise Levels on Board Ships~~ MSC.337(91) *Code on Noise Levels On Board Ships*, and take into account IMO Res. A.343(IX), *Recommendation on Methods of Measuring Noise Levels at Listening Posts*.

Part 6, Chapter 2

Electrical Engineering

CORRIGENDA

■ Section 10

Converter equipment

10.1 Transformers

10.1.11 Transformers for propulsion power are to be provided with arrangements such that, in the event of excessive winding temperature, an alarm is initiated and:

- the load is reduced to a level commensurate with the cooling arrangements; or
- automatic ~~shut-down~~ shutdown of the transformer occurs.

10.2 Semiconductor converters

10.2.6 Where forced cooling is used there is to be temperature monitoring of the heated cooling medium with an alarm and ~~shut-down~~ shutdown when the temperature exceeds a preset value.

■ Section 14

Electrical equipment for use in explosive gas atmospheres or in the presence of combustible dusts

14.3 Selection of equipment for use in the presence of combustible dusts

(Part only shown)

14.3.4 Where equipment certified for combustible dusts is not available, consideration will be given to the use of apparatus complying as a minimum, with the following requirements provided no explosive gases will be present:

- (d) pressurised and operated in accordance with procedures ensuring, prior to its re-energisation, the absence of dust within the enclosure following loss of pressurisation and consequent ~~shut-down~~ shutdown, and having surface temperature complying with (b),

14.8 Pressurisation

(Part only shown)

14.8.1 A space having access to a hazardous space or zone defined as **zone 1** or **zone 2** may be regarded as non-hazardous if fulfilling all the following conditions:

- (c) the relative air pressure within the space is continuously monitored and so arranged that, in the event of loss of overpressure, an alarm is given and the electrical supply to all equipment not of a type suitable for **zone 1** is automatically disconnected. Where the ~~shut-down~~ shutdown of equipment could introduce a hazard, an alarm may be given, in lieu of shutdown, upon loss of overpressure, and a means of disconnection of electrical equipment not of a type suitable for **zone 1**, capable of being controlled from an attended station, provided in conjunction with an agreed operational procedure; where the means of disconnection is located within the space then it is to be effected by equipment of a type suitable for **zone 1**;

Section 17 Fire Safety Systems

17.3 Fixed water-based local application fire-fighting systems

17.3.10 The evidence required by 17.3.9 is to demonstrate the safe and effective operation of the overall arrangements in the event of system operation. This evidence is to demonstrate that exposure to system spray and/or water:

- cannot result in loss of essential services (e.g., unintended activation of automatic machinery ~~shut-down~~ shutdown);
- cannot result in loss of availability of emergency services;
- will not affect the continued safe and effective operation of electrical and electronic equipment required to operate during the required period of system operation;
- does not present additional electrical or fire hazards; and
- would require only identified readily replaceable components to be repaired or replaced.

The installation of electrical and electronic equipment required to provide essential or emergency services in enclosures with a degree of protection less than IP44 within areas exposed to direct spray is to be acceptable to LR, and evidence of suitability is to be submitted accordingly.

Part 6, Chapter 3 Refrigerated Cargo Installations

CORRIGENDA

Section 1 General requirements

1.2 Plans and particulars

(Part only shown)

1.2.1 The following plans and particulars, as applicable, and any others which may be specially requested for the **refrigerating plant and systems**, are to be submitted in triplicate for approval, before construction is commenced:

- (b) Detailed dimensioned plans and material specifications for:
 - reciprocating compressor crankshaft and crankcase, where exposed to refrigerant pressure;
 - rotary-type compressor rotors and casing;
 - condensers shell and tube and plate type;
 - evaporators shell and tube and plate type;
 - air coolers;
 - arrangement of air cooling pipe grids and construction method;
 - liquid receivers;
 - oil separators; and
 - any other pressure vessels, see ~~Pt 5, Ch 11, 6.1~~ Pt 5, Ch 11, 1.6.1.

Section 4 Refrigeration plant, pipes, valves and fittings

4.11 Piping systems

4.11.9 All pipelines are to be fully supported and secured so as to prevent vibration. Flexible hoses may be used, where necessary, to prevent transmission of vibration provided the documentation in 4.11.8 is provided. Flexible hoses are to be of a type which has been approved by LR, see Pt 5, Ch ~~12, 6~~ 12, 7.

4.15 Overpressure protection devices

4.15.6 Compressors protected by bursting discs are to be provided with automatic ~~shut-down~~ shutdown in the event of high discharge temperatures.

4.15.7 Each compressor is to be provided with automatic ~~shut-down~~ shutdown in the event of high discharge pressure. For refrigeration systems where the maximum working pressure is less than or equal to 40 bar g the automatic ~~shut-down~~ shutdown to operate at a pressure in excess of normal operating pressure but no greater than 0,9 of the maximum working pressure. For refrigeration systems where the maximum working pressure is greater than 40 bar g the automatic ~~shut-down~~ shutdown is to operate at a pressure in excess of normal operating pressure but no greater than 0,95 of the maximum working pressure.

■ Section 7 **Instrumentation, control, alarm, safety and monitoring systems**

7.1 Instrumentation

7.1.1 All compressors are to be provided with the following instrumentation and automatic ~~shut-downs~~ shutdowns:

- Indication of suction pressure (saturated temperature), including intermediate stage, when applicable.
- Indication of discharge pressure (saturated temperature), including intermediate stage, when applicable.
- Indication of lubricating oil pressure.
- Indication of cumulative running hours (screw compressors).
- Automatic ~~shut-down~~ shutdown in the event of low lubricating oil pressure.
- Automatic ~~shut-down~~ shutdown in the event of high discharge pressure, see also 4.15.7.
- Automatic ~~shut-down~~ shutdown in the event of low suction pressure.

7.2 Control, alarm and safety systems

7.2.2 Alarms are to be initiated in the event of the following compressor fault conditions:

- High discharge pressure.
- Low suction pressure.
- Low oil pressure.
- High discharge temperature.
- High oil temperature.
- Motor ~~shut-down~~ shutdown.

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